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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/629,173

07/29/2003

Chan-Long Shieh

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7590

07/13/2004

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EXAMINER

TOLEDO, FERNANDO L

ART UNIT

PAPER NUMBER

2823

DATE MAILED: 07/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

AM

Office Action Summary	Application No. 10/629,173	Applicant(s) SHIEH, CHAN-LONG	
	Examiner Fernando L. Toledo	Art Unit 2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-25 is/are allowed.
- 6) ☒ Claim(s) 1,3-5,8-10 and 12-15 is/are rejected.
- 7) ☒ Claim(s) 2,6,7,11,16 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3 – 5, 8 – 10 and 12 – 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Coman et al. (U. S. patent 6,320,206 B1).

In re claim 1, Coman, in the U. S. patent 6,320,206 B1; figures 1 – 7 and related text, discloses depositing a long wave-length active region 18 on a compatible substrate (Figure 3a); depositing a first mirror stack 14 on the first major surface of the long wave-length active region so as to define a major surface of the first mirror stack (Figure 3b); affixing a supporting substrate to the major surface of the first mirror stack (Figure 3c); removing the compatible substrate to expose an opposed second major surface of the long wave-length active region (Figure 3d); and depositing a second mirror stack 20 on the second major surface of the long wave-length active region (Figure 3e).

3. In re claim 3, Coman discloses depositing layers of material with good thermal conductivity (Column 4, Lines 27 – 29).

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4. In re claim 4, Coman discloses depositing layers of material with a thermal conductivity comparable to a lattice matched semiconductor distributed Bragg reflector (Column 4, Lines 27 – 29).

5. In re claim 5, Coman discloses metamorphically growing a distributed Bragg reflector on the first major surface of the long wave-length active region (Column 4, Lines 25 – 30).

6. In re claim 8, Coman discloses the supporting substrate to the major surface of the first mirror stack includes bonding a supporting substrate approximately thermal-expansion matched tot the first mirror stack (Column 6, Lines 1 – 20).

7. In re claim 9, Coman discloses bonding a supporting substrate includes bonding a mechanical InP substrate to the first mirror stack (Column 5, Lines 30 – 35).

8. In re claim 10, Coman discloses affixing the supporting substrate to the major surface of the first mirror stack includes depositing a supporting layer of heat conducting material on the major surface of the first mirror stack (Column 6. Lines 1 – 25).

9. In re claim 12, Coman discloses wherein the step of depositing the supporting layer of heat conducting material in the major surface of the first mirror stack includes depositing a metal (Column 6, Lines 1 – 25).

10. In re claim 13, Coman discloses wherein the step of depositing metal includes depositing one of copper, silver, gold, nickel and aluminum (Column 6, Lines 1 – 25).

11. In re claim 14, Coman discloses wherein the step of depositing the second mirror stack includes depositing one of distributed Bragg reflector and dielectric mirror stack 20 (Figure 2).

12. In re claim 15, Coman discloses wherein the step of depositing the second mirror stack includes depositing layers of material with good temperature conductivity (Column 4, Lines 40 – 45).

Claim Objections

13. Claims 2, 6, 7, 11, 16 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Allowable Subject Matter

14. Claims 18 – 25 are allowed over the prior art of record.

15. The following is a statement of reasons for the indication of allowable subject matter: Coman does not disclose teach or suggests depositing an InP based long wave-length active region on an InP based substrate and removing the InP substrate to expose an opposed second major surface of the long wave-length active region. Coman uses a sapphire substrate and the active region is of InAlGaN. There is no motivation, aside from improper hindsight to alter the teachings of Coman to change the active region and the substrate to InP.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fernando L. Toledo whose telephone number is 571-272-1867. The examiner can normally be reached on Mon-Thu 7am to 5:30pm.

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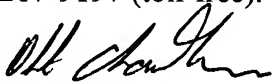
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 571-272-1855. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



FToledo

7 July 2004



Olik Chaudhuri
Supervisory Primary Examiner
Art Unit 2823